

Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Claim Rejections - 35 USC § 112

Claims 9 and 19 were rejected for want of an enabling disclosure. According to the Examiner, the specification is non-enabling in regards to how the shape of a patient body part is assigned in the navigation system based on the position of the fixed point captured by the camera.

Page 4, lines 8-19 of the present application discusses applying at least one marker, detectable by the navigation system, to the object (e.g., patient body part to be treated) so as to use the marker position, as captured by the camera, to assign the location and shape of the patient body part to the navigation system.

Indeed, the specification does not describe at length how to assign a fixed point, such as a marker position, in a navigation system, as the same was known in the art at the time the application was filed. Methods of assigning a fixed point in a navigation system existed and were available to persons skilled in the art at the time the application was filed.

In particular, one skilled in the art knew, at the time of the priority application, how to assign a fixed point in a navigation system. This is evidenced by the document attached hereto as Exhibit 1. For example, pages 28-38 of this document discuss patient referencing.

In view of the foregoing, it is respectfully submitted that the application is enabling. Therefore, the rejection should be withdrawn.

Claim Rejections - 35 USC § 103

Claim 1, as amended, recites a method of detecting the shape of a patient body part to be treated, which includes, *inter alia*, producing a camera image of the patient body part and mapping a sufficient number of outlines of the patient body part to establish a three-dimensional shape of the patient body part.

Cosman is Deficient

As noted by the Examiner, Cosman fails to disclose establishing a three-dimensional shape of a patient body part by mapping an outline of the patient body part in multiple focusing distances. While the Examiner relies on Nayar to supplement the disclosure of Cosman, it is respectfully submitted that this rejection is improper because there is no motivation to combine Cosman and Nayar.

There is No Motivation to Combine Cosman and Nayar

On page 2 of the Office Action, the Examiner contends that "the suggestion/motivation for combining the teachings of Cosman and Nayar would have been to enhance the treatment process by providing the capability of detecting the three-dimensional shape of the object at a higher speed." The Examiner points to pages 218 and 223 of Nayar to support this contention.

Study of Nayar, with particular attention to pages 218 and 223, reveals that Nayar does not make a single mention of any medical application, let alone "enhancing the treatment process by providing the capability of detecting the three-dimensional shape of [a patient body part] at a higher speed."

Rather, page 218 of Nayar is concerned with "visibly rough surfaces that produce textured images with high frequency intensity variations." Page 223 includes reference to study of "a steel ball sample that was 1590 μ m in diameter" and application to "inspection of via-hole filling on ceramic substrates." This reference includes Fig. 10 and 10b showing SEM images having a scale of 50 μ m. If anything, these teachings would direct a skilled artisan away from combining the teachings of Nayar and Cosman.

The Examiner is reminded that any teaching or suggestion to make the claimed combination or modification and the reasonable expectation of success must both be found in the prior art, and not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See also, *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

With respect to the Examiner's assertion at page 5 of the Office Action that "Cosman and Nayar are both concerned with image processing systems for detecting the three dimensional shape of an object," it is respectfully submitted that this is not enough to establish a prima facie case of obviousness. Nayar is concerned with extracting shapes of surfaces having "visible roughness." Nayar makes no mention of any medical application, let alone, mapping a three-dimensional shape of a patient body part using multiple focusing distances. "Image processing" is such a broad field

with so many completely different applications that this term does not connect Cosman and Nayar in a way sufficient to support a prima facie case of obviousness.

For at least these reasons, it is respectfully submitted that claim 1 and claims 2-6, 9-13 and 18 dependent therefrom distinguish patentably over the references of record. Accordingly, the rejection should be withdrawn.

For at least the reasons articulated above with respect to claim 1, it is respectfully submitted that new claim 19 distinguishes patentably over the references of record.

In addition, claim 19 recites applying at least one marker, which is detectable by a navigation system, to the patient body part and assigning a location and shape of a mapped three-dimensional body part in a navigation system, with the assigning being performed based on the position of the at least one marker captured by the camera.

Neither Cosman nor Nayar, taken alone or in combination, disclose or fairly suggest assigning a location and shape of a mapped three-dimensional body part in a navigation system based on the position of the at least one marker captured by the camera.

Further, claim 19 recites processing the mapped shape of the patient body part with the navigation system to incorporate the three-dimensional shape of the patient body part in navigation. Both Cosman and Nayar are silent with respect to this feature of claim 19.

For at least these reasons, it is respectfully submitted that claim 19 distinguishes patentably over the references of record. Accordingly, the rejection should be withdrawn.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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